Fig.1

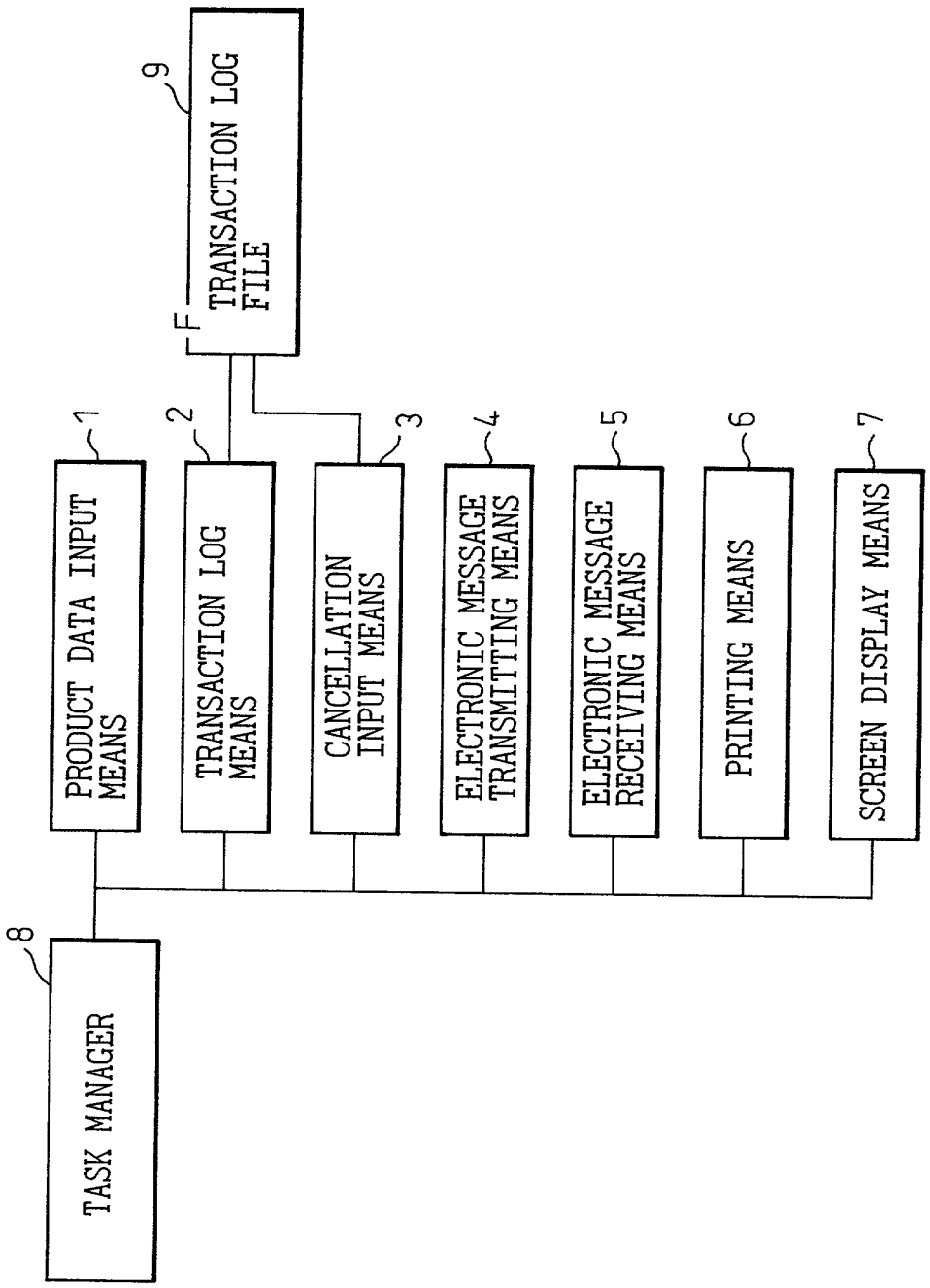

9
TRANSACTION LOG FILE
F
1
PRODUCT DATA INPUT MEANS
2
TRANSACTION LOG MEANS
3
CANCELLATION INPUT MEANS
4
ELECTRONIC MESSAGE TRANSMITTING MEANS
5
ELECTRONIC MESSAGE RECEIVING MEANS
6
PRINTING MEANS
7
SCREEN DISPLAY MEANS
8
TASK MANAGER

Fig.2

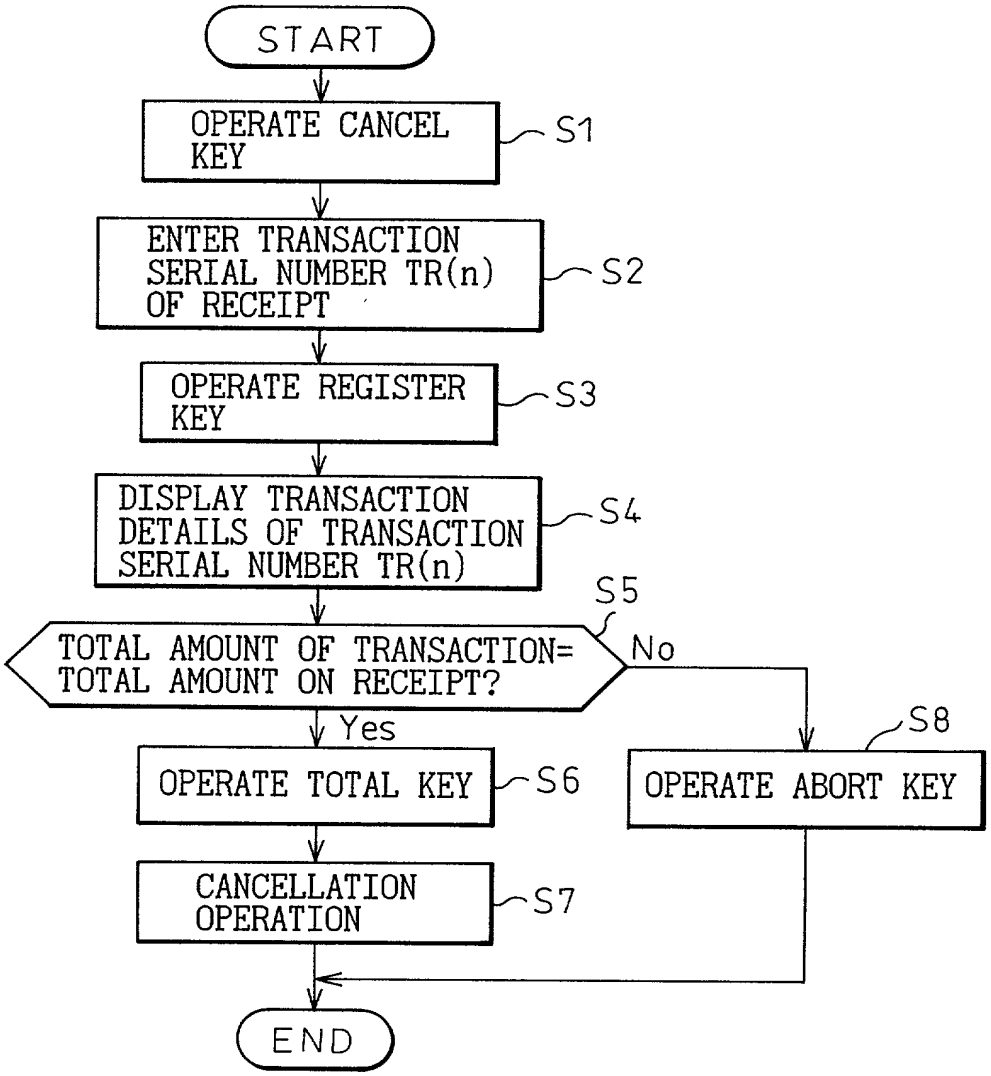

START
OPERATE CANCEL KEY
S1
ENTER TRANSACTION SERIAL NUMBER TR(n) OF RECEIPT
S2
OPERATE REGISTER KEY
S3
DISPLAY TRANSACTION DETAILS OF TRANSACTION SERIAL NUMBER TR(n)
S4
S5
TOTAL AMOUNT OF TRANSACTION= TOTAL AMOUNT ON RECEIPT?
No
Yes
OPERATE TOTAL KEY
S6
CANCELLATION OPERATION
S7
S8
OPERATE ABORT KEY
END

Fig.3

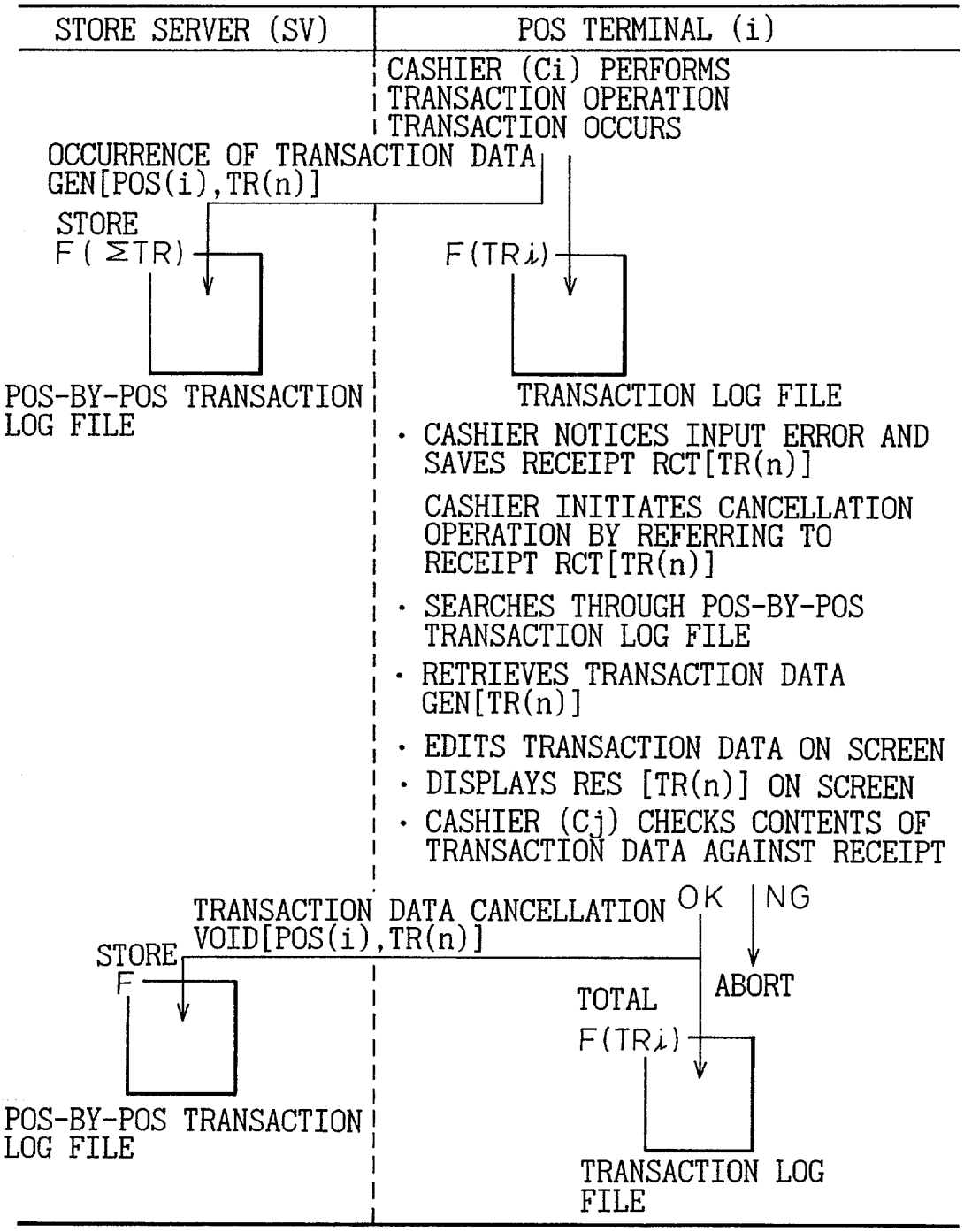

STORE SERVER (SV)
POS TERMINAL (i)
CASHIER (Ci) PERFORMS TRANSACTION OPERATION
TRANSACTION OCCURS
OCCURRENCE OF TRANSACTION DATA
GEN[POS(i),TR(n)]
STORE
F(ΣTR)
F(TRi)
POS-BY-POS TRANSACTION LOG FILE
TRANSACTION LOG FILE
· CASHIER NOTICES INPUT ERROR AND SAVES RECEIPT RCT[TR(n)]
CASHIER INITIATES CANCELLATION OPERATION BY REFERRING TO RECEIPT RCT[TR(n)]
· SEARCHES THROUGH POS-BY-POS TRANSACTION LOG FILE
· RETRIEVES TRANSACTION DATA GEN[TR(n)]
· EDITS TRANSACTION DATA ON SCREEN
· DISPLAYS RES [TR(n)] ON SCREEN
· CASHIER (Cj) CHECKS CONTENTS OF TRANSACTION DATA AGAINST RECEIPT
TRANSACTION DATA CANCELLATION
VOID[POS(i),TR(n)]
OK
NG
ABORT
STORE
F
TOTAL
F(TRi)
POS-BY-POS TRANSACTION LOG FILE
TRANSACTION LOG FILE

Fig.4

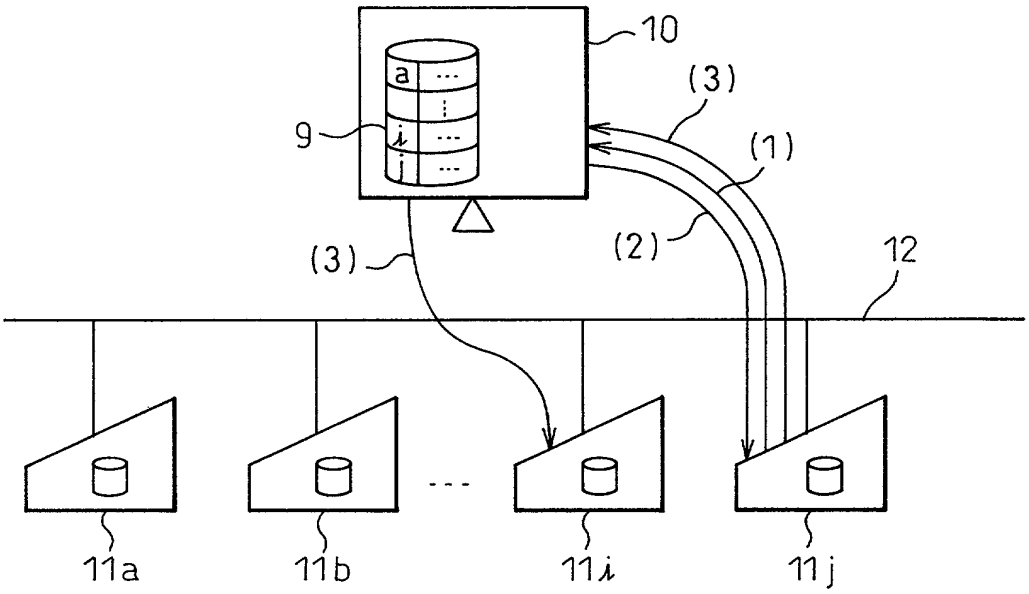


Fig.5

POS NUMBER POS(i)	TRANSACTION SERIAL NUMBER TR(n)	TRANSACTION DATA abc ···

Fig.6

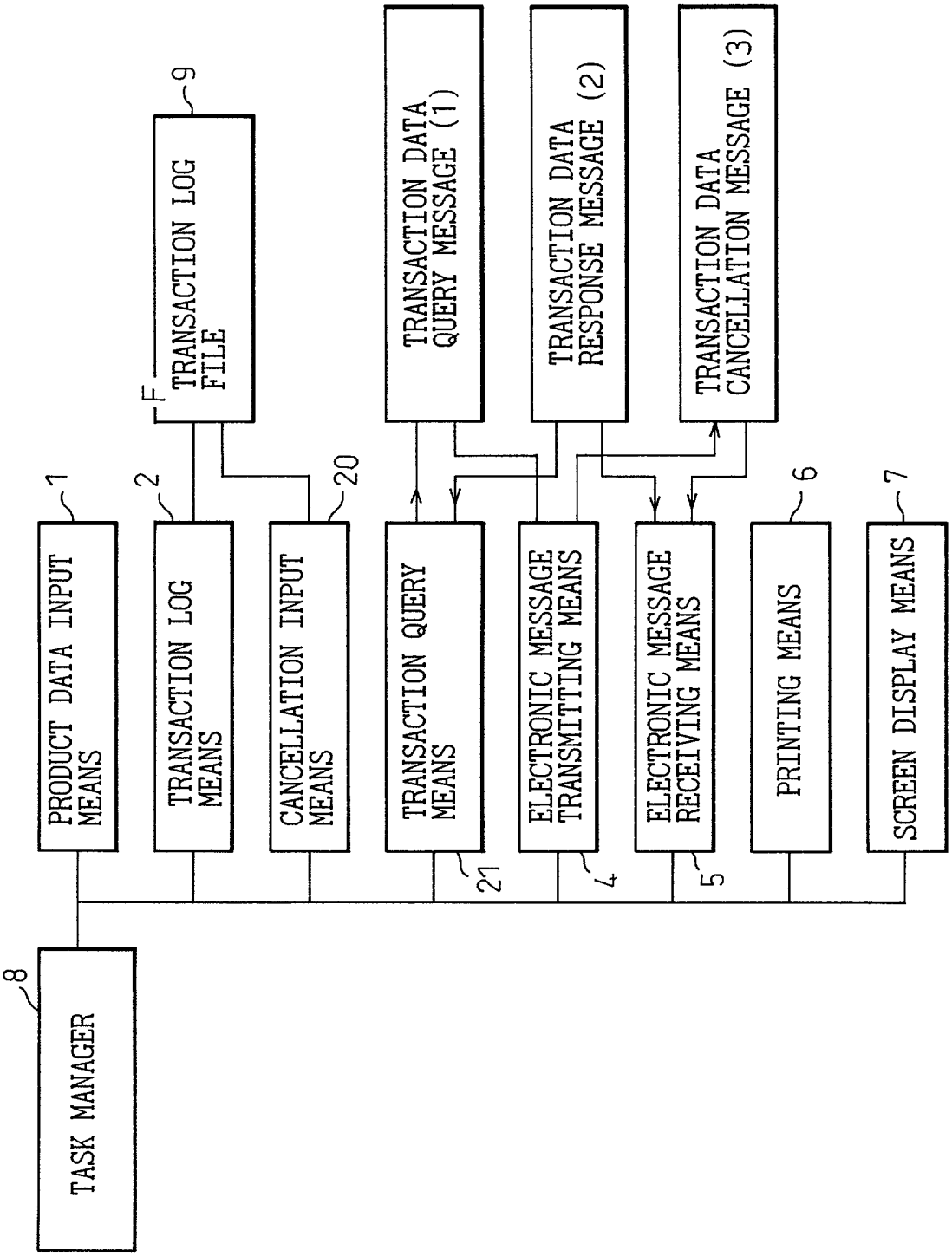

TASK MANAGER
8
PRODUCT DATA INPUT MEANS
1
TRANSACTION LOG MEANS
2
CANCELLATION INPUT MEANS
20
TRANSACTION QUERY MEANS
21
ELECTRONIC MESSAGE TRANSMITTING MEANS
4
ELECTRONIC MESSAGE RECEIVING MEANS
5
PRINTING MEANS
6
SCREEN DISPLAY MEANS
7
F
TRANSACTION LOG FILE
9
TRANSACTION DATA QUERY MESSAGE (1)
TRANSACTION DATA RESPONSE MESSAGE (2)
TRANSACTION DATA CANCELLATION MESSAGE (3)

Fig.7

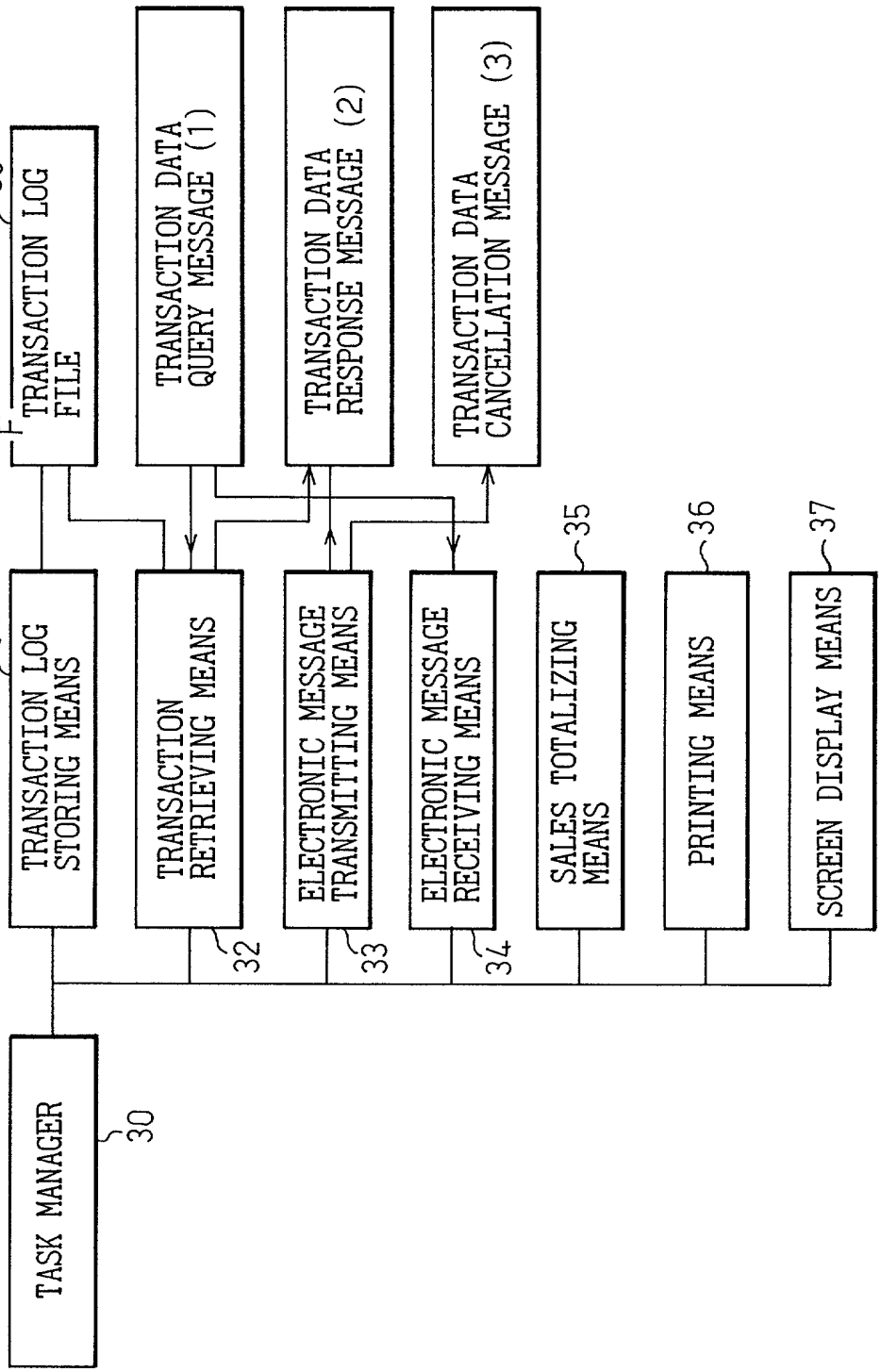

TASK MANAGER
30
TRANSACTION LOG STORING MEANS
31
TRANSACTION RETRIEVING MEANS
32
ELECTRONIC MESSAGE TRANSMITTING MEANS
33
ELECTRONIC MESSAGE RECEIVING MEANS
34
SALES TOTALIZING MEANS
35
PRINTING MEANS
36
SCREEN DISPLAY MEANS
37
F
TRANSACTION LOG FILE
38
TRANSACTION DATA QUERY MESSAGE (1)
TRANSACTION DATA RESPONSE MESSAGE (2)
TRANSACTION DATA CANCELLATION MESSAGE (3)

Fig.8

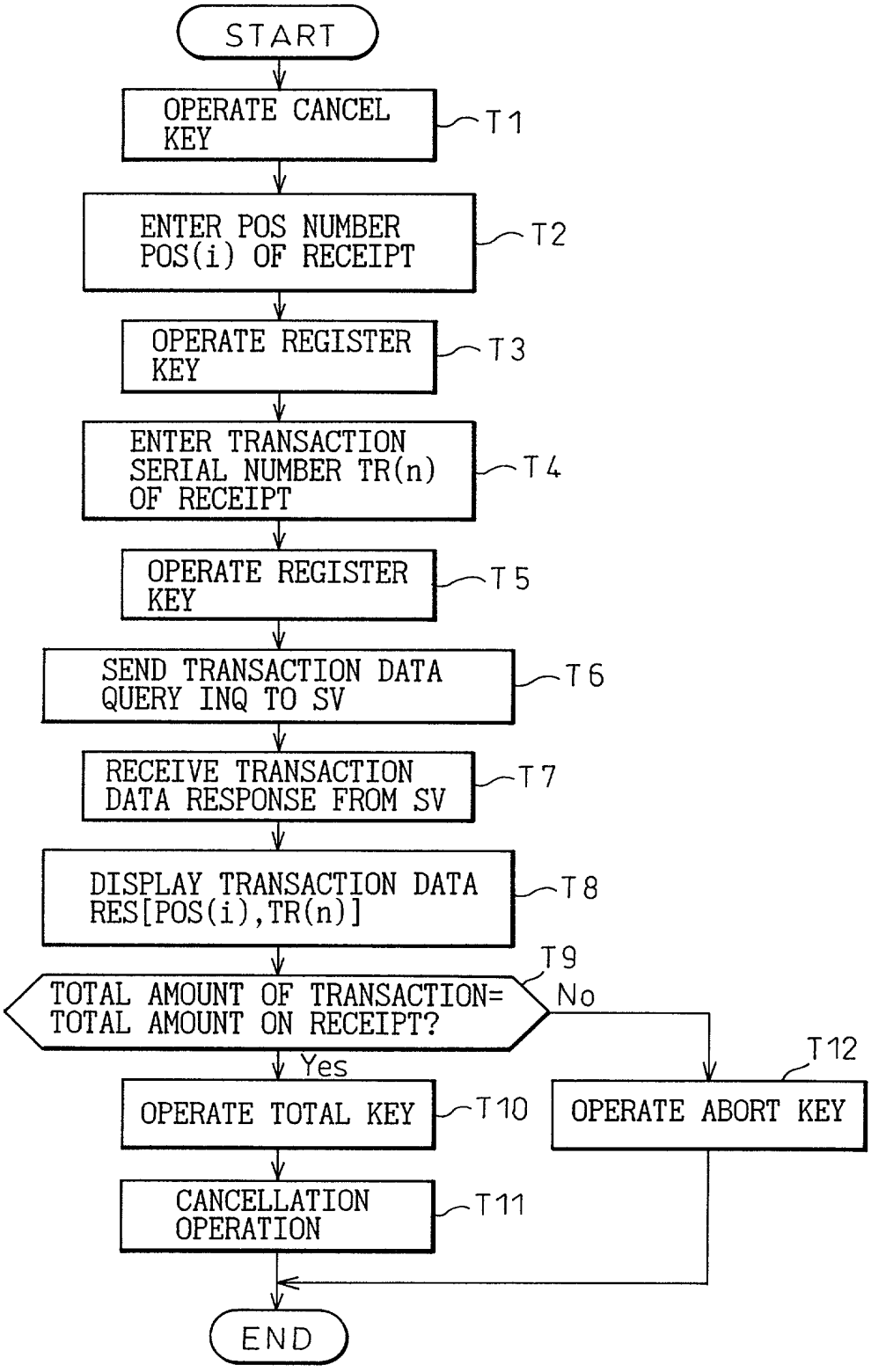

START
OPERATE CANCEL KEY
T1
ENTER POS NUMBER POS(i) OF RECEIPT
T2
OPERATE REGISTER KEY
T3
ENTER TRANSACTION SERIAL NUMBER TR(n) OF RECEIPT
T4
OPERATE REGISTER KEY
T5
SEND TRANSACTION DATA QUERY INQ TO SV
T6
RECEIVE TRANSACTION DATA RESPONSE FROM SV
T7
DISPLAY TRANSACTION DATA RES[POS(i),TR(n)]
T8
T9
TOTAL AMOUNT OF TRANSACTION= TOTAL AMOUNT ON RECEIPT?
No
Yes
T12
OPERATE TOTAL KEY
T10
OPERATE ABORT KEY
CANCELLATION OPERATION
T11
END

Fig.9A

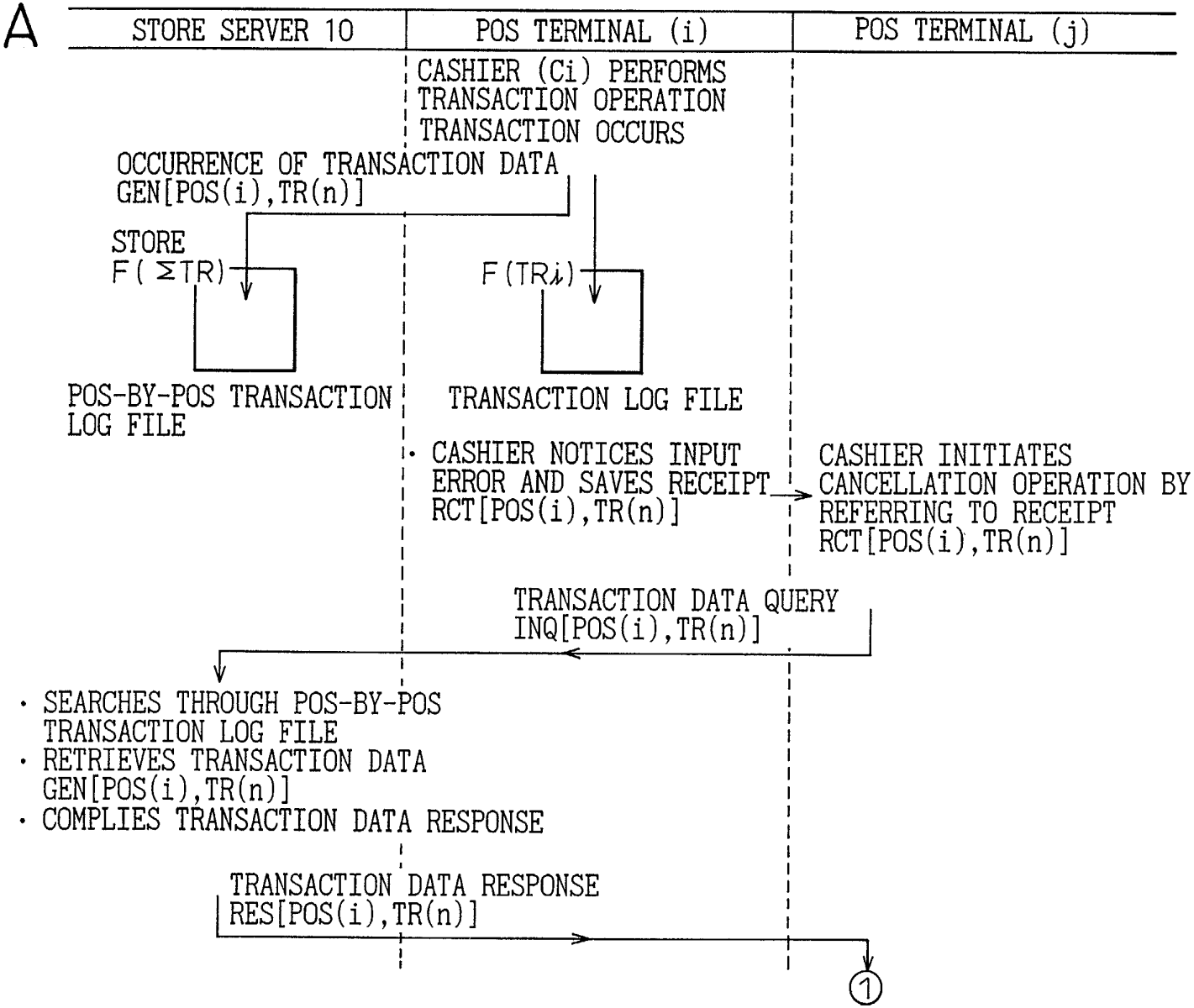

STORE SERVER 10
POS TERMINAL (i)
POS TERMINAL (j)
CASHIER (Ci) PERFORMS TRANSACTION OPERATION
TRANSACTION OCCURS
OCCURRENCE OF TRANSACTION DATA
GEN[POS(i),TR(n)]
STORE
F(ΣTR)
F(TRi)
POS-BY-POS TRANSACTION LOG FILE
TRANSACTION LOG FILE
· CASHIER NOTICES INPUT ERROR AND SAVES RECEIPT
RCT[POS(i),TR(n)]
CASHIER INITIATES CANCELLATION OPERATION BY REFERRING TO RECEIPT
RCT[POS(i),TR(n)]
TRANSACTION DATA QUERY
INQ[POS(i),TR(n)]
· SEARCHES THROUGH POS-BY-POS TRANSACTION LOG FILE
· RETRIEVES TRANSACTION DATA GEN[POS(i),TR(n)]
· COMPLIES TRANSACTION DATA RESPONSE
TRANSACTION DATA RESPONSE
RES[POS(i),TR(n)]
①

Fig.9B

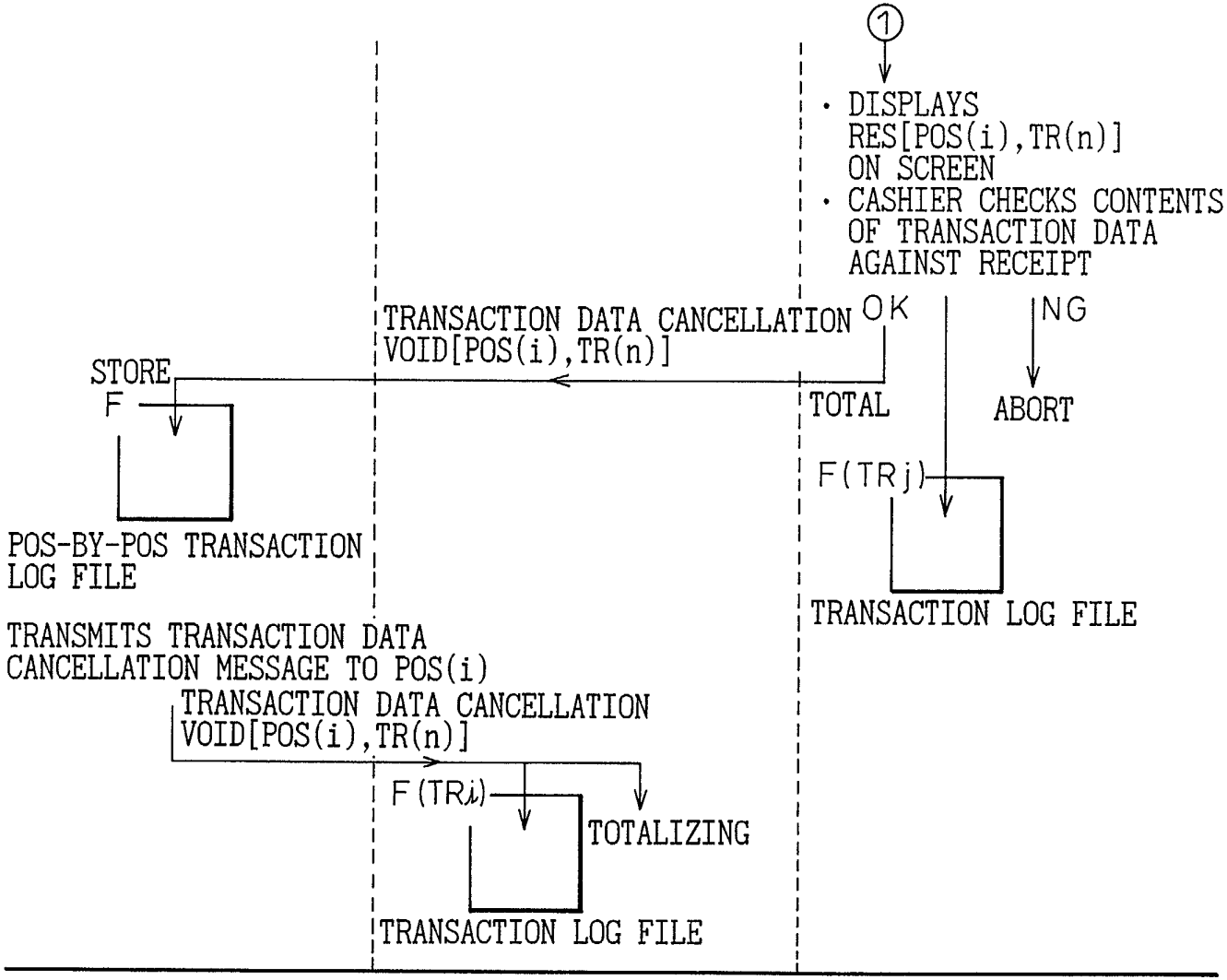

①
· DISPLAYS RES[POS(i),TR(n)] ON SCREEN
· CASHIER CHECKS CONTENTS OF TRANSACTION DATA AGAINST RECEIPT
OK
NG
TRANSACTION DATA CANCELLATION VOID[POS(i),TR(n)]
STORE F
TOTAL
ABORT
F(TRj)
POS-BY-POS TRANSACTION LOG FILE
TRANSACTION LOG FILE
TRANSMITS TRANSACTION DATA CANCELLATION MESSAGE TO POS(i)
TRANSACTION DATA CANCELLATION VOID[POS(i),TR(n)]
F(TRi)
TOTALIZING
TRANSACTION LOG FILE

Fig.10

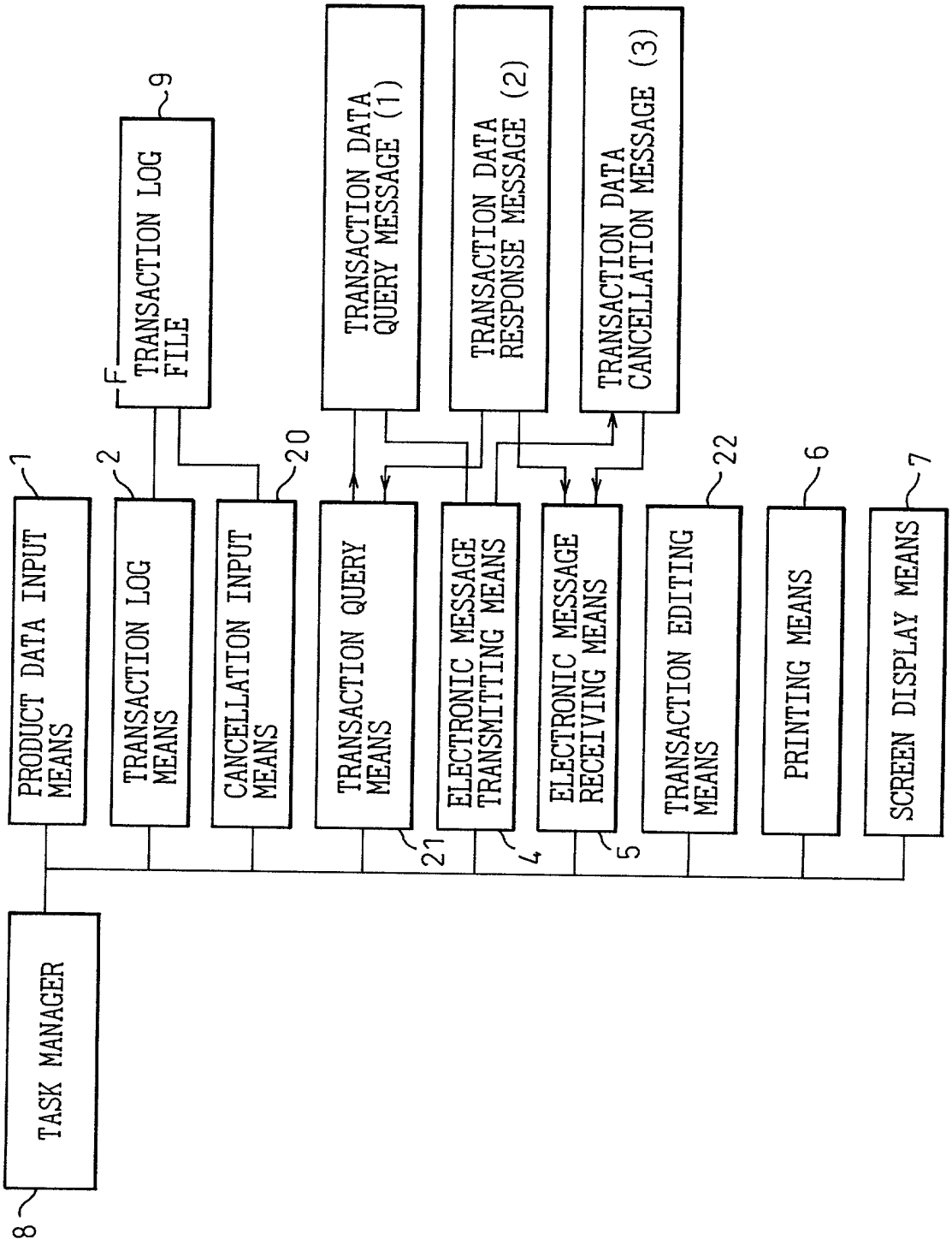

TASK MANAGER
8
PRODUCT DATA INPUT MEANS
1
TRANSACTION LOG MEANS
2
CANCELLATION INPUT MEANS
20
TRANSACTION QUERY MEANS
21
ELECTRONIC MESSAGE TRANSMITTING MEANS
4
ELECTRONIC MESSAGE RECEIVING MEANS
5
TRANSACTION EDITING MEANS
22
PRINTING MEANS
6
SCREEN DISPLAY MEANS
7
TRANSACTION LOG FILE
F
9
TRANSACTION DATA QUERY MESSAGE (1)
TRANSACTION DATA RESPONSE MESSAGE (2)
TRANSACTION DATA CANCELLATION MESSAGE (3)

Fig.11

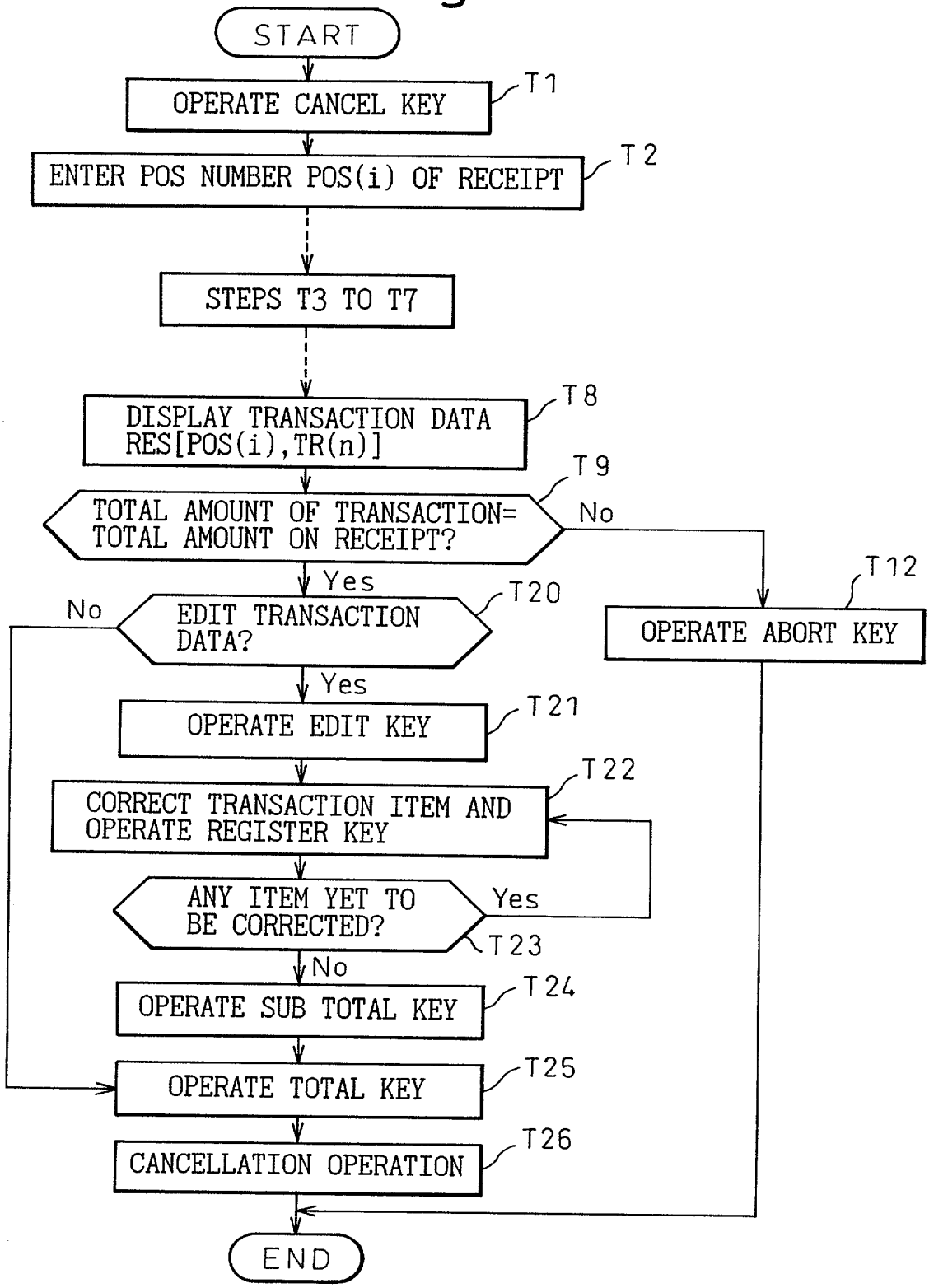

START
OPERATE CANCEL KEY
T1
ENTER POS NUMBER POS(i) OF RECEIPT
T2
STEPS T3 TO T7
DISPLAY TRANSACTION DATA RES[POS(i),TR(n)]
T8
TOTAL AMOUNT OF TRANSACTION= TOTAL AMOUNT ON RECEIPT?
T9
No
Yes
EDIT TRANSACTION DATA?
T20
No
Yes
OPERATE ABORT KEY
T12
OPERATE EDIT KEY
T21
CORRECT TRANSACTION ITEM AND OPERATE REGISTER KEY
T22
ANY ITEM YET TO BE CORRECTED?
Yes
T23
No
OPERATE SUB TOTAL KEY
T24
OPERATE TOTAL KEY
T25
CANCELLATION OPERATION
T26
END

Fig.12A

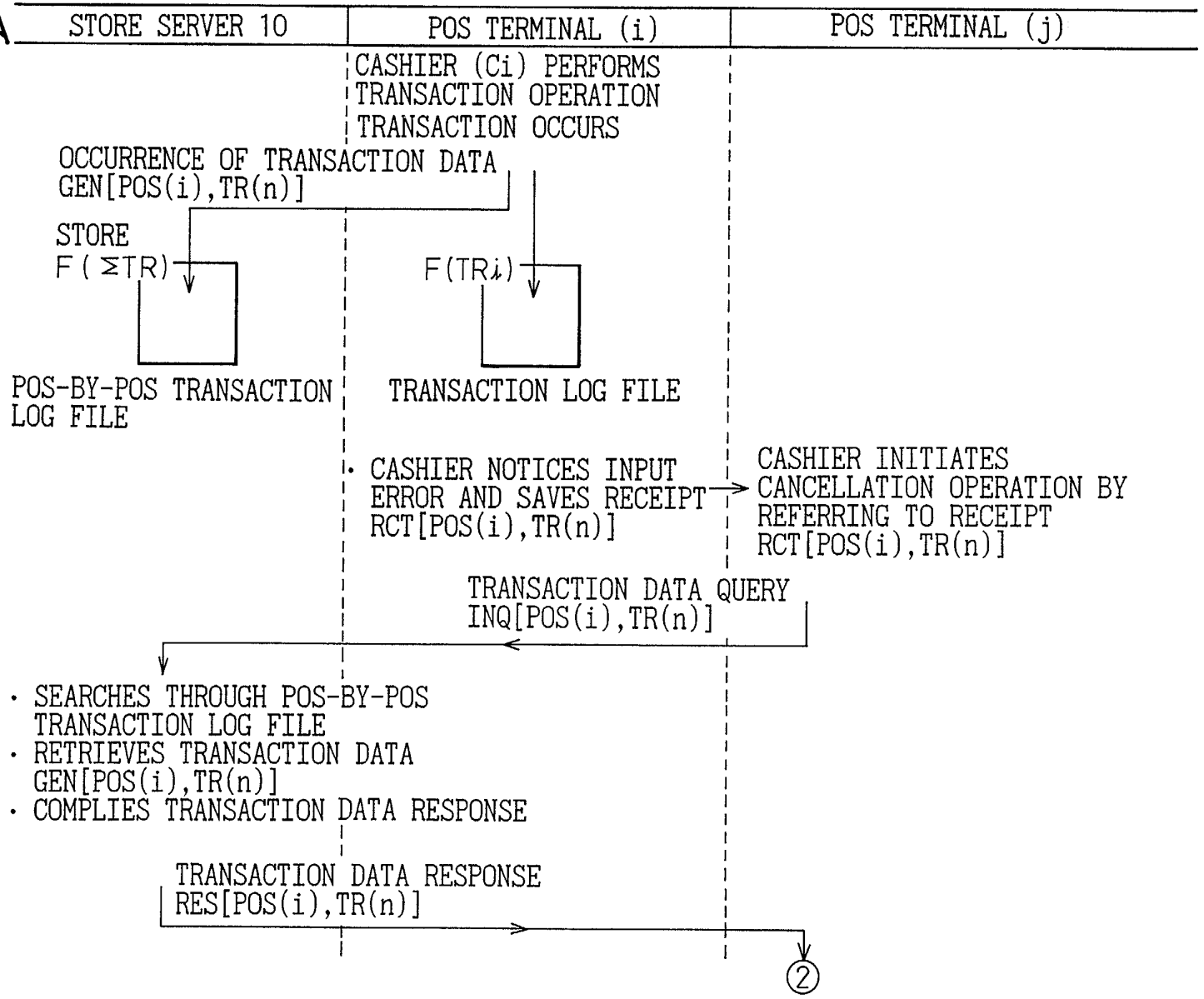
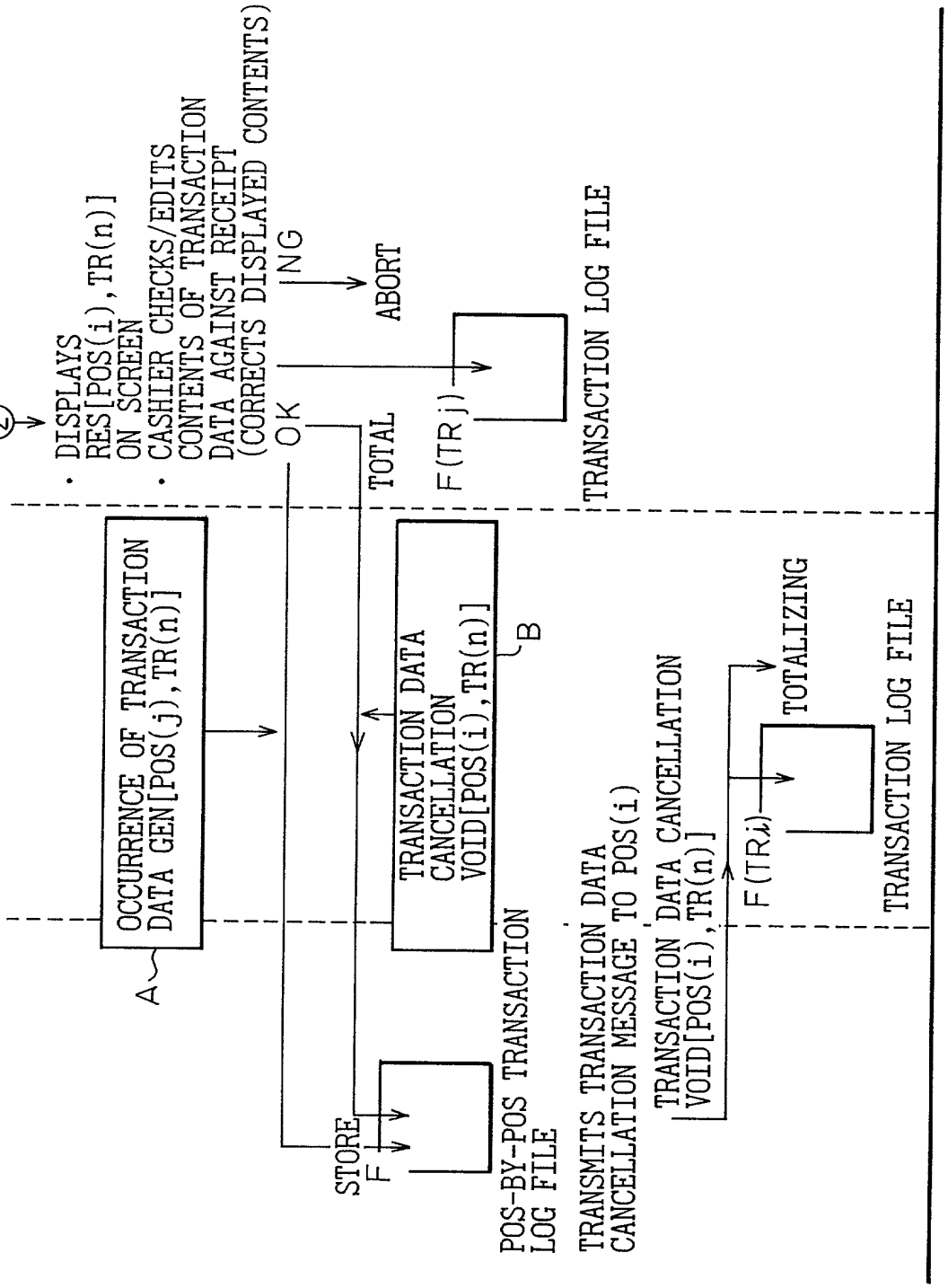

STORE SERVER 10
POS TERMINAL (i)
POS TERMINAL (j)
CASHIER (Ci) PERFORMS TRANSACTION OPERATION
TRANSACTION OCCURS
OCCURRENCE OF TRANSACTION DATA
GEN[POS(i),TR(n)]
STORE
F(ΣTR)
F(TRi)
POS-BY-POS TRANSACTION LOG FILE
TRANSACTION LOG FILE
· CASHIER NOTICES INPUT ERROR AND SAVES RECEIPT RCT[POS(i),TR(n)]
CASHIER INITIATES CANCELLATION OPERATION BY REFERRING TO RECEIPT RCT[POS(i),TR(n)]
TRANSACTION DATA QUERY
INQ[POS(i),TR(n)]
· SEARCHES THROUGH POS-BY-POS TRANSACTION LOG FILE
· RETRIEVES TRANSACTION DATA GEN[POS(i),TR(n)]
· COMPLIES TRANSACTION DATA RESPONSE
TRANSACTION DATA RESPONSE
RES[POS(i),TR(n)]
②

Fig.12B


②
· DISPLAYS RES[POS(i),TR(n)] ON SCREEN
· CASHIER CHECKS/EDITS CONTENTS OF TRANSACTION DATA AGAINST RECEIPT (CORRECTS DISPLAYED CONTENTS)
OK
NG
ABORT
TOTAL
F(TRj)
TRANSACTION LOG FILE
OCCURRENCE OF TRANSACTION DATA GEN[POS(j),TR(n)]
A
TRANSACTION DATA CANCELLATION VOID[POS(i),TR(n)]
B
STORE F
POS-BY-POS TRANSACTION LOG FILE
TRANSMITS TRANSACTION DATA CANCELLATION MESSAGE TO POS(i)
TRANSACTION DATA CANCELLATION VOID[POS(i),TR(n)]
F(TRi)
TOTALIZING
TRANSACTION LOG FILE